

Faraday's Researches

IV. Thermo-Electricity

85. With regard to thermo-electricity (that beautiful form of electricity discovered by Seebeck), the very conditions under which it is excited are such as to give no ground for expecting that it can be raised like common electricity to any high degree of tension; the effects, therefore,, due to that state are not to be expected. The sum of evidence respecting its analogy to the electricities already described, is, I believe, as follows:—
Tension. The attractions and repulsions due to a certain degree of tension have not been observed. *In currents:* i. *Evolution of heat.* I am not aware that its power of raising temperature has been observed, ii. *Magnetism.* It was discovered, and is best recognised, by its magnetic powers, iii. *Chemical decomposition.* *position* has not been effected by it. iv. *Physiological effects.* Nobili has shown * that these currents are able to cause contractions in the limbs of a frog. v. *Spark.* The spark has not yet been seen.

86. Only those effects are weak or deficient which depend upon a certain high degree of intensity; and if common electricity be reduced in that quality to a similar degree with the thermo-electricity, it can produce no effects beyond the latter.

V. Animal Electricity

87. After an examination of the experiments of Walsh,² Ingenhousz,³ Cavendish,⁴ Sir H. Davy,⁵ and Dr. Davy,⁶ no doubt remains on my mind as to the identity of the electricity of the torpedo with common and voltaic electricity; and I presume that so little will remain on the minds of others as to justify my refraining from entering at length into the philosophical proofs of that identity. The doubts raised by Sir H. Davy have been removed by his brother Dr. Davy; the results of the latter being the reverse of those of the former. At present the sum of evidence is as follows:—
88. *Tension.*—No sensible attractions or repulsions due to tension have been observed.
89. *In motion:* i. *Evolution of "heat;"* not yet observed; I

¹ *Bibliothèque Universelle*, xxxvii. 15.

² *Philosophical Transactions*, 1773, P. 461. ³ *Ibid.* 1775, p. i.

⁴ *Ibid.* 1776, p. 196- ⁵ *Ibid.* 1829, p. 15. ⁶ *Ibid.* 1832, p. 259.